



SECTION 733

PRECAST CONCRETE BOX CULVERTS

733.1 Description. This work shall consist of furnishing and installing precast concrete box culverts.

733.1.1 Unless otherwise required in the contract, where the construction of cast-in-place single or multi-cell reinforced concrete box culverts is specified, the contractor shall have the option of constructing such culverts using precast reinforced concrete box sections and headwalls subject to the conditions specified in the contract.

733.2 Material.

733.2.1 All material shall conform to Division 1000, Materials Details, and specifically as follows:

Item	Section
Precast Box Culverts	1049
Plastic Joint Compound for Vitrified Clay and Concrete Pipe	1057.3
Tubular Joint Seal	1057.4
Mortars and Grout	1066

733.3 Construction Requirements.

733.3.1 Subgrade Preparation and Bedding. The excavation and backfilling for the precast box sections and end sections shall be in accordance with the requirements of [Sec 206](#) except a layer of granular material at least 6 inches (150 mm) thick shall be placed immediately below the elevation of the bottom of the box and end sections. The granular material shall meet the requirements of [Sec 1007](#) for Types 1, 2 or 3 aggregate, and shall be placed to extend at least 18 inches (450 mm) each side of the structure. The bedding shall be compacted to provide uniform support for the bottom of the box and end sections. No direct payment will be made for furnishing, placing or compacting the granular material.

733.3.2 Placement. The individual box section shall be set to lines and grades shown on the plans with the groove end upstream, and the spigot end extended full length into the adjacent downstream section of box.

733.3.2.1 All joints between individual box sections shall be sealed with an approved plastic joint compound or a tubular joint seal. Trowel grade compounds shall be applied to both mating surfaces. Rope or tape type plastic joint compounds and tubular joint seals shall be applied in accordance with the manufacturer's recommendations. The joints shall be forced together with excess compound extruding both inside and outside the joint. Excess compound shall be removed from the interior surface. The joint between the box sections shall be uniform for the full perimeter.

733.3.2.2 Where lift holes as approved on the drawings have been used, the holes shall be filled with expansive mortar or tapered precast mortar plugs to provide a watertight section.

The mortar shall be finished flush on the inside of the box and shall be properly cured on the outside. Tapered precast plugs shall be thoroughly sealed with plastic joint compound material. Lifting devices shall have sufficient bearing on the inside of the box section to avoid damage resulting from a concentration of stresses around the lift holes.

733.3.2.3 When multi-cell box culverts are used, a 1 1/2 inch (38 mm) minimum space shall be left between the adjacent precast sections. Following the installation of the end sections, the 1 1/2 inch (38 mm) space between the parallel sections shall be entirely filled with mortar for grout. After the mortar has attained sufficient strength, backfilling of the sections in accordance with [Sec 206](#) may begin.

733.4 Method of Measurement.

733.4.1 If the contractor, at the contractor's option, constructs the alternate precast box culvert, measurement will be made as provided for the cast-in-place structure for Class B Concrete (Culverts) and Reinforcing Steel (Culverts).

733.4.2 If precast box culvert is specified in the contract, precast box culvert, complete in place including end sections, will be measured to the nearest foot (0.5 m) along the geometrical center of the culvert floor. Final measurement will not be made except for authorized changes during construction or where appreciable errors are found in the contract quantity.

733.5 Basis of Payment.

733.5.1 Accepted optional precast concrete box culvert, including end sections, will be paid for at the unit price for each of the pay items included in the contract for the cast-in-place concrete box culvert.

733.5.2 If precast box culvert is specified in the contract, the accepted quantities for the concrete box culvert, complete in place including end sections, will be paid for at the unit price for the pay items included in the contract.